UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

Project	Date	Author

TITLE

INSECT RECONNAISSANCE SURVEY OF

STIRLING CITY-LAKE ALMANOR INFESTATION AREAS

JUNE 1940

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by
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Berkeley, California
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INSECT RECONNAISSANCE SURVEY OF STIRLING CITY-LAKE ALMANOR INFESTATION AREAS JUNE 1940

INTRODUCTION

A forest insect reconnaissance survey of the Stirling City and Lake Almanor Infestation Areas was made by the writer June 3-15, 1940. The survey was prompted by recent outbreaks of forest insects in commercial timber stands particularly in Upper Deer Creek, Last Chance Creek, Yellow Creek and Butt Creek drainages. The main purpose of the survey was to establish infestation units so that the areas in question could be brought into the forest insect survey program and to determine if possible the extent of the 1939 insect losses. The latter, due to rapid loss of external characteristics (1) in recently killed trees, especially sugar pine, was not obtained at this time.

RECENT SURVEYS

Recent surveys of forest insect conditions in these two areas were made in several periods during the summer and fall of 1939. Kenneth R. Walker, J. M. Miller, K. A. Salman and R. C. Hall appraised conditions (2) on the west shore of Lake Almanor, Butt Creek, Humbug Valley, Burned Ground and Yellow Creek, July 1939. Infestations were found to have started in immature ponderosa and sugar pines in 1938, successive broods in 1939 showing a tendency to attack the older more mature trees.

Dr. K. A. Salman, September 1-15, 1939, made an appraisal (3) of forest insect conditions in the west side forests north of townships 16 and 17 north, Mount Diablo Meridian. He found in the Stirling City and Lake Almanor Infestation Areas, epidemic infestations of western pine beetle in ponderosa pine and mountain pine beetle in sugar pine. Seasonal losses in white fir were above normal. Local outbreaks of douglas fir beetle and the hemlock bark borer in douglas fir were observed. The writer found during the present survey that the infestation in douglas fir was very severe, notably in upper Deer Creek, lower Yellow Creek, and especially in lower Indian Valley where groups of 40-50 dying trees were commonly found.

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(1) Salman, K. A. Unusual Conditions of 1939 Infested Sugar Pine Trees Containing Overwintering Broods. June 11, 1940.

(2) Salman, K. A. Moody Meadows, Butt Creek and Humbug Valley Infestations, Plumas County, California. July 18, 1939.

(3) Salman, K. A. Reconnaissance of West Side Infestation Conditions, Season of 1939. October 6, 1939.

Direct control (4) was considered by Salman in Mill Creek-Deer Creek, West Shore Lake Almanor, Seneca-Butt Valley Reservoir, Yellow Creek and Last Chance Creek Units.

J. E. Patterson and G. R. Struble, in October 1939, made an examination (5) of the control units set up by Salman in October. It appeared that the infestation was of recent origin, not over 3 or 4 years standing in ponderosa and sugar pine. It was felt that the sugar pine infestation was of a sporadic nature and would show an early abatement. Direct control was recommended for those areas where large values are at stake and where the infestation showed an increasing or sustained tendency.

PRESENT SURVEY

The present survey set up two infestation areas which were subdivided into smaller infestation units based on forest type and topographic boundaries.

The 1939 insect losses, especially sugar pine, are not apparent as recently killed trees. It required a rather detailed examination to distinguish 1939 brood trees from those killed in 1937 or 1938. Few of the recently killed trees retained their foliage and in many cases the sapwood was in an advanced stage of decay. It appeared that the entire bole of the sugar pines were attacked by broods of the same generation. Foliage on ponderosa pine was in most cases in the "black stage". The absence of "red-tops" of which counts are made to base loss estimates on, precluded the possibility of obtaining a loss figure without intensive cruising over a large area. It appears that the late fall is the best time to appraise infestation conditions in these areas.

A half-section, 320 acres (map, appendix), in the Onion Butte Unit was cruised for insect loss on June 11. The data from this cruise are summarized in Table 1.

This sample, obtained in an area to be logged in the near future, is not the most heavily infested area in the region. Even so, pine losses are impressive and should they continue they will seriously deplete the commercial timber values.

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(4) Salman, K. A. Insect Control Possibilities, West Side Areas, Season of 1939. October 26, 1939.

(5) Patterson, J. E. and G. R. Struble. Current Insect Infestations, Certain West Side Areas in the Lassen and Plumas National Forests. November 13, 1939.

It was observed in cruising this sample area and also in other areas that the pine infestation appeared to have its origin in 1938. During the winter of 1937-38, mature timber stands in this region suffered quite severely from windthrow and snowbreak. The windfalls and green snag trees were infested the following spring, the infestation then spreading to green standing trees in the surrounding vicinity. Insect activity at the time of this examination did not indicate what the infestation would be for 1940. One 1940 topkill in ponderosa pine was observed. No tangible evidence was found that would serve to indicate or predict the extent of the 1940 losses.

The mature stands as a whole, in the two infestation areas, show losses above normal for 1939 (see map, appendix). The sugar and ponderosa pine infestations have received more attention than other species, primarily because of their present economic importance. The infestations in douglas and white fir are relatively as serious as those in the pines. Incense cedar losses which were very light in the areas were not abnormal.

CONTROL ASPECTS

Insect infestations, due to their unpredictable nature, can seriously affect the economic stability of a lumbering enterprise. Timber owners and lumbermen operating in an area where an infestation such as the present one is must make adjustments for losses sustained. Direct control measures, in the treating of infested trees by felling and burning is costly, and only temporarily effective. A control program would require a greater outlay of funds than private owners can make available for effective application over such an extensive infested area.

Indirect control measures, aimed at removing high value trees such as mature sugar and high risk ponderosa pines can be considered. It might be feasible to inaugurate a system of quick, light cutting over large areas wherein high value and high risk trees would be removed. It would give one quick striking power to combat a sudden insect infestation, fire salvage, etc. Such a procedure, hitherto untried in west side lumbering operations, might have to be handled along different lines than the present system of cutting uses. It might mean that the small portable mills and trucks be used instead of railroads and a central milling plant.

Preliminary results from operations in California east side pine stands (Black's Mountain Experimental Forest) where cutting is aimed at removing high risk and currently infested ponderosa and Jeffrey pine trees, have been encouraging. At the present time no risk values, comparative to those applied to ponderosa and jeffrey pines are available for sugar pine.

It is felt that some such practice will be a logical one to follow in dealing with large insect infestations in commercial west side pine stands.

TABLE 1. Insect Loss - N ½ Sec. 15, Twp. 27 N, R 3 E, Mount Diablo Meridian

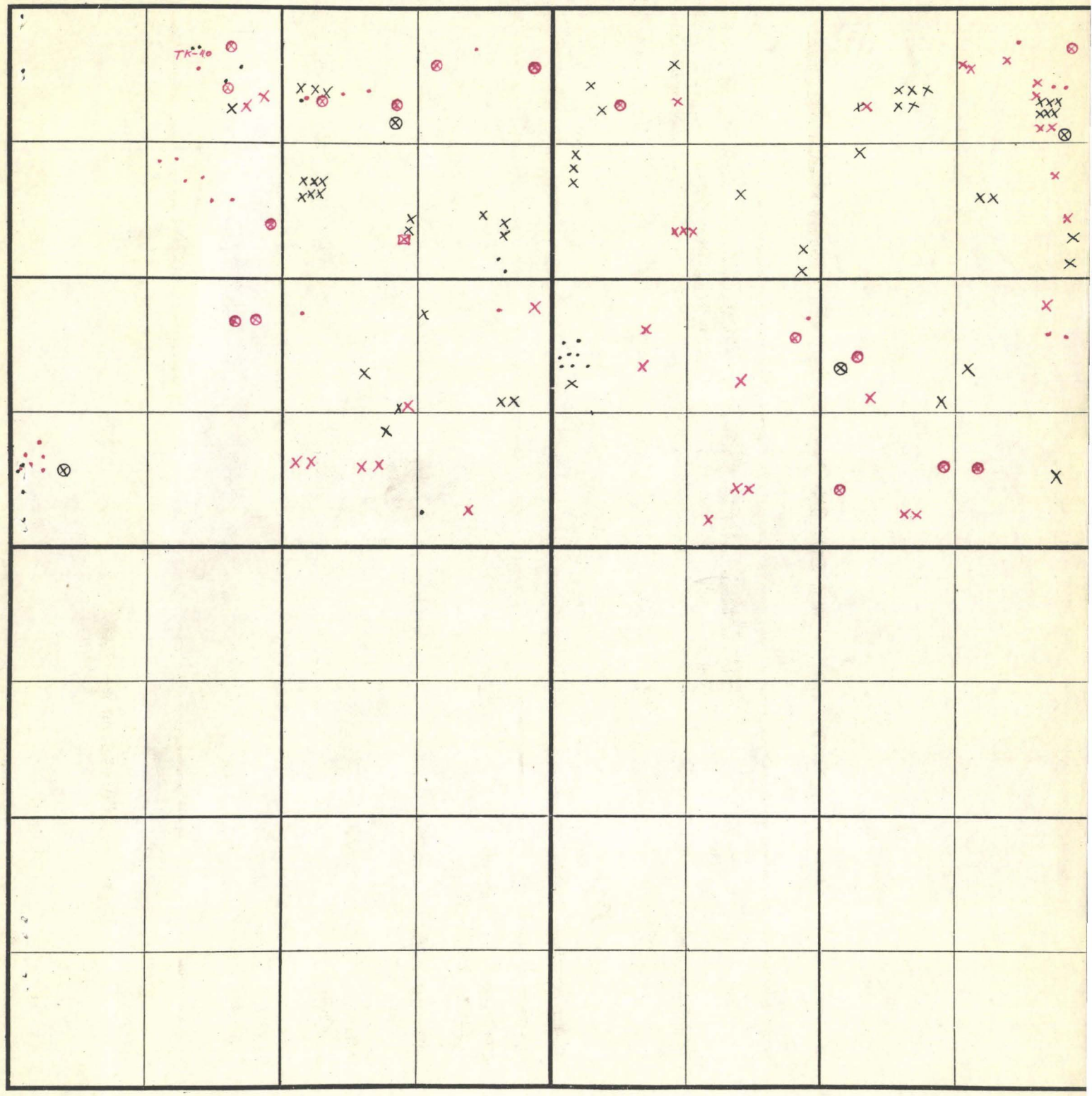
Year	Sugar Pine		Pond. Pine		White Fir		Douglas Fir		All Species	
	Trees	Vol.MBM	Trees	Vol.MBM	Trees	Vol.MBM	Trees	Vol.MBM	Trees	Vol.MBM
1937-38	49	93	20	32	4	8			73	133
1939	35	86	22	62	16	24	1	3	74	175
Total 3-year loss	84	179	42	94	20	32	1	3	147	308
Average B.F. per acre Loss. 1937-38		290		100		25				415
Average B.F. per acre Loss in 1939		268		194		75		9		547
Average B.F. per acre Loss. 1937-38-39		558		294		100		9		962
Percent Stand* Loss - three years		6.0%		3.1%		4.2%		3.4%		Av. 4.1%

* Based on 10% cruise by Wambold, Diamond Match Co., October 1937.

TREATING PLAT

Project Area Stirling City **Unit** Onion Butte **Camp No.**

Date June 11, 1940 **Compass man** Townsend-Wambold-Carlson **T.** 27N **R.** 3E **Sec.** N½ 15



Remarks: 1939 Shown in Red : 1937-38 Shown in Black

x = Sugar Pine · = Ponderosa Pine ⊗ = White Fir ⊠ = Douglas Fir

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
FOREST INSECT LABORATORY – BERKELEY, CALIFORNIA

FOREST INSECT SURVEY

LAKE ALMANOR INFESTATION AREA

MT DIABLO MERIDIAN

SCALE
0 ½ 1 2 3 4 Miles

Legend
UNIT BOUNDRY

T29N
T28N
T27N
T26N
T25N

R4E. R5E. R6E. R7E. R8E. R9E.

20' 10' 40° 00' 121°30' 20' 10' 121°00'

Small Butte
Mud Cr Butte
Brush Hill
Manzanita Mtn.
Stover Mtn
Butt Mtn
Ruffa Ridge
Eagle Rocks
Sunflower Flat
Chester
Gould Swamp
Mason Jct
Goodrich Mtn.
Goodrich
WESTWOOD
Old Town
Dye Mtn
Keddie Mtn
Homer L
Hidden L
Deerhorn L
Almanor
Prattville
Longville
Greenville
Rattlesnake Hill
Rush Cr Hill
Cherry Hill
Red Hill
Virgilia
Rich
Crescent Mills
Arlington Heights
Mt Hough
Indian Falls Ridge
Onion Flat
Bellas Flat
Skinner Flat
Gansner Bar
Fryman Flat
Feather River Meadows
Deer Creek Meadows
Soldier Pass Mdws.
Mountain Meadows Reservoir
Lake Almanor
Feather River
Deer Creek
Butt Creek
Indian Creek
Wolf Creek
Rush Creek
CHILDS MEADOWS
DEER CREEK
BUTT
LAKE ALMANOR
SENECA
HUMBUG
RED HILL
ROUND VALLEY

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FOREST INSECT SURVEY

STIRLING CITY INFESTATION AREA

MT. DIABLO MERIDIAN

SCALE

MILES

LEGEND

UNIT BOUNDRY

N

T.28 N.

T.27N.

T.26N.

T.25N.

T.24N.

T.23N.

T.22N.

R.2E.

R3E.

R.4E.

R.5E.

10'

40° 00'

30'

40'

121°30'

DEER CREEK

ONION BUTTE

WINDY CUT

BUTTE MEADOWS

POLK SPRING

CAMPBELL LEGGETT

INSKIP CHANCE

LONE PINE

RAMSEY BAR

STIRLING

FLEA VALLEY

PARADISE

Round Val.

Deer Creek Meadows

Buff Mtn.

Mill Creek Rim

McCarthy Point

Onion Butte

Black Rock

Ruffa Ridge

Eagle Rocks

Barley Mtn.

Flat Iron Mtn

Sugar Loaf

Golby Mtn.

Humboldt Summit

Humboldt Peak

Polk Springs

Jonesville

Humbug Summit

Iron Mtn.

Ike Dye Hill

Chico Meadows

Soda Springs

Butte Meadows

Cirby Meadow

Digger Pine Flat

Steamboot Mtn.

Devils Kitchen

Devils Den

Cold Spring Hill

Bull Hill

Lomo

Chaparral

Spring Valley Mtn.

Brushy Mtn.

Ridge

Promontory Pk.

West Branch

Inskip

Table Mtn.

Potato Patch

Bald Mtn.

Powellton

Ramsey Bar

Forks of Butte

Stirling City

Sugar Loaf

Merlin

Toadtown

De Sabla

Centerville

Appleton

Bear Ranch Hill

Nimshew

Flea Valley

Flea Mtn.

Mayaro

Magalia

Sawmill Pk.

Paradise

Concow Resvr

Big Bar Mtn.